Distributed Security Architectures

Third Quarter 2003 Progress Report

Covers work done April through June, 2003.

Personnel:

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Akenti Server

The SOAP version of the Akenti server is now being used and the old akenti simple protocol version has been discarded. The XML messages were refined this quarter and the protocol is now being expanded to include a policy collection interface to support a policy checker and display tool.

Wrote a Java SOAP client forAkenti using JAXB for generating the code that writes XML Akenti requests. This codes uses the Java SOAP library to write soap messages. Thus, this client confirmed that the server was talking standard SOAP. This client will also be used by Java applications to interface with Akenti.

Akenti Policy Engine

Spent most of the policy engine effort on debugging the Globus Job Manager/ Akenti integration. The job manger is C code which calls the C++ Akenti policy engine, both pieces of code use a couple of common third party libraries. Akenti was switched to do all dynamic linking and considerable effort was spent making sure that only one set of the shared libraries were loaded. There wer a few hard to find code bugs that did not show up in a stand-alone environment. As part of this effort we got Akenti to compile and run using gcc3 compilers on Linux and Solaris. and updated the third-party code pakages that we use.

Certificate Generators

The summer students started on a few refinements to the generators, including converting them to run with JDK1.4.0/2. as well as JDK1.3

Code Distribution

We have updated our code to use the latest versions of Xerces-c, Cppuint, openSSL and openLDAP. The Xerces update required considerable code changes to move to their latest API. The other upgrades did not require much effort.

Collaboration with Other Projects

Implementation of the C++ security shared library continued. This library will facilitate sharing of high quality implementations of commonly used security functions among the Secure and Reliable Group Communication project, the Peer to Peer File Sharing project and Akenti.

Progress is being made on the Python code to digitally sign SOAP messages. We expect that his experience will be helpful when coding the signing of Akenti XML certificates.

Visited colleagues at the University of Manchester to help them install and understand Akenti. We received the report comparing PERMIS and Akenti done by members of the PERMIS project at the University of Salford. We are in the process of fixing some weaknesses that were pointed out.

Work has begun on designing authorization policy for the SCISHARE project. We have concluded that a light version of Akenti, AkentiLite, will be used. It is not intended that this version will change the current design of the Akenti Engine, but will provide users of the SCISHARE application with a simpler access policy. AkentiLite will be entirely implemented in Java, which may encourage other Java projects to use it.